

CHAPTER 11

HAZARDS AND SAFETY MEASURES

As a military driver, you will have to face many hazardous driving situations. Hazards may be the result of weather, time of day, or season of the year. They may be caused by conditions of the road or of your vehicle or other vehicles.

NIGHT DRIVING

Darkness increases driving dangers. Although traffic is not as heavy at night, the fatality rate for nighttime drivers is double that for daytime drivers. On the basis of mileage driven, night driving is two to three times more dangerous than day driving. Fatigue and sharply reduced vision are primarily responsible for this greater danger. Also, drinking drivers are more likely to be on the road at night.

Reduced Vision

In the daytime, a driver can often see several thousand feet ahead if the road is straight and there are no obstructions. At night, even with good headlights, a driver can usually see no more than a few hundred feet ahead. The headlights may be powerful, but the amount of the beam reflected by an object or a pedestrian may be very small, and it decreases very rapidly as the distance increases. An object 100 feet away reflects only one-fourth as much light as an object 50 feet away, and an object 200 feet away, only one-sixteenth as much.

Hills and curves reduce vision during the daytime, but not nearly as much as they do at night. In the daytime, a driver going downhill can ordinarily see the level road at the bottom and/or the upgrade of the next hill. At night, his headlight beams slant downward with his vehicle, illuminating only the road directly ahead. Curves have a similar effect. As a driver rounds a curve at night, his headlights do not follow the path of the curve. They shine across the road, leaving most of the curve in darkness.

Vision to the sides and the rear is also greatly restricted at night. It is especially important at night that rearview mirrors be properly adjusted. If they

are not, a driver may have little warning of vehicles coming from behind.

Glare from the headlights of other vehicles often results in several seconds of near blindness. This is especially true if the headlights of the other vehicle are out of adjustment or if the other driver fails to lower or dim his beams. However, even the glare from properly adjusted and dimmed headlights may affect some drivers. The light from buildings or signs along the road may also be blinding. It takes most drivers at least 2 or 3 seconds to recover from the effects of glare. At 50 MPH, 3 seconds means 219 feet.

A dirty windshield multiplies the effect of glare. In the headlight beams of an approaching vehicle, the specks of dirt on your windshield seem to glow and turn the windshield into a wall of light that is almost impossible to see through. You cannot drive safely, especially at night, without a clean windshield.

When parking at night, never leave your headlights on. They are just as likely to blind approaching drivers when your vehicle is standing still as they are when it is moving. They may also confuse approaching drivers about the exact position of the road. This danger is increased if you are parked on the wrong side of the road. Whenever you park on or along a highway at night, turn on your parking lights or four-way emergency flasher.

NOTE: Emergency vehicles may leave headlights on when they are required to illuminate an area in an emergency.

Seeing is especially difficult at dusk. There is no longer enough natural light to see clearly without using headlights, but there is too much natural light for the eyes to adjust properly for night driving. The twilight hazard is especially serious in the fall as the days grow shorter and it begins to get dark as people are driving home from work. Many of them do not notice the darkness increasing from day to day and fail to take it into account in their driving.

Fatigue

Many drivers on the road after dark are likely to be tired. The majority of them have done a day's work. Others have been driving all day and are trying to add a few more miles before they stop for the night. Seeing things through a drowsy haze, a tired driver may need several seconds to recognize danger and decide what to do about it. His decisions may be wrong and his reactions slow.

When you are tired, it takes longer to recover from the effects of glare and also your eyes often play tricks on you. More than one driver has been killed or seriously injured trying to avoid a collision with a pedestrian or animal that existed only in his imagination. Tired drivers greatly increase the hazards of night driving.

Safe Night Driving

Speed. The basic rule for safe night driving is NEVER OUTFRAN YOUR HEADLIGHTS. Your stopping distance should always be less than your sight distance. The law requires headlights that will enable you to see clearly any person on the highway for as much as 200 feet ahead of your vehicle. (Since the effectiveness of headlights diminishes greatly as the distance increases, headlights must be in good working order to meet legal requirements.) What effect should this rule have on your speed? At 55 MPH, the stopping distance for a vehicle with brakes meeting the legal stopping distance requirements is 307 feet, or 107 feet more than the distance you can see. At 50 MPH, the stopping distance is 258 feet, or 58 feet more than the distance you can see. At 45 MPH, it is 217 feet, or 17 feet more than the distance you can see.

Speeds of 50 and 55 MPH, safe and legal under good conditions in the daytime, are very often unsafe and illegal at night. They may be unsafe because by the time your headlights reveal a dangerous condition, it may be too late to stop. These speeds may also be illegal under the basic provisions of the speed law which makes it unlawful to drive at a speed greater than is reasonable and prudent under existing conditions.

As a general rule, keep your speed under 50 MPH at night. On curves or hills, your speed should be even lower - low enough so that you are always able to stop within the range of your headlights.

Some drivers, preparing for long trips, prefer to drive at night because traffic is lighter, and they can make better time. Traffic is lighter, but on a mileage basis, the chances of getting killed or killing someone are two to three times as great. Plan trips so that you can drive during daylight hours rather than at night. Unnecessary night driving does not make sense.

Lights. Most state laws require you to turn your headlights on from sunset to sunrise. In the daytime, turn on your lights whenever rain, fog, or snow impairs visibility or if there is not enough light for you to see an object clearly 200 feet ahead of you. Keep your headlights on low beam when driving in places where enough light is provided by street lamps. Where there is no street illumination, use your high beams except when meeting or following another vehicle.

Lower your high beams when you are approaching a vehicle coming toward you. As you meet another vehicle at night, watch the road ahead of you. Do not look directly at the lights of the other vehicle. If the driver of the other vehicle fails to lower his headlights, do not flick your lights to remind him. Avoid looking directly at the bright lights, glance to the right side of the road, then quickly look ahead to determine the other vehicle's position.

As soon as you have met and passed a vehicle, switch on your high beams again. It is dangerous to meet another vehicle with high beams, but it is also dangerous to drive along with low beams when there is no reason for it.

NOTE: Never drive with only your parking lights on. If conditions are such that there is reduced visibility, your headlights should be on.

WEATHER

Bad weather means poor driving conditions. Rain, snow, and sleet reduce visibility and make pavements dangerous. In fog, and sometimes in heavy rain or snow, you may be able to see only a few feet ahead. Braking distances on slippery pavements may be from 2 to 10 times as great as on dry pavement. The danger of swerving sharply to one side or the other when you apply your brakes is much greater on slippery pavements,

especially if the brakes are out of adjustment and the pressure is not equalized.

Rain

Most drivers slow down or pull off the road in a heavy downpour, but many do not realize that roads are likely to be especially slick just after rain or drizzle begins. The first few drops loosen grease and dirt accumulated on the road surface. Loosened grease and dirt mix with raindrops, quickly covering the road with an extremely dangerous, slippery film. Later on, after the water has washed some of the grease and dirt away, the road is likely to be less slippery. To the safe driver, the first few drops of rain are danger signals telling him to slowdown and be extra cautious. On wet pavements, allow at least twice the normal following distance. For example, when following on wet pavement, use a 4-second instead of a 2-second rule.

In wet weather, extra caution is necessary on mountain roads. Rocks, loosened by water seepage, may fall onto the road. Water beneath the pavement may freeze during a cold snap and cause the pavement to buckle. A driver may suddenly find broken pavement or rocks in his path as he rounds a curve. Unless he is driving slowly, he may not be able to avoid them. Wet roads may also cause hydroplaning, a condition in which directional control is partially or totally lost.

Snow and Ice

Snow and ice reduce traction even more than a wet pavement does. A thin layer of soft snow that allows tires to sink through to the road can be negotiated by a careful driver. Packed snow or ice is another matter. When driving on snow or ice, make sure your vehicle is equipped with chains, snow tires, or studded tires. Even then, you must use extreme caution to maintain traction and keep from skidding when you attempt to stop or turn. When roads are dangerous because of weather, drive with extra alertness at reduced speed according to conditions.

Even when a road is generally clear of ice, you may suddenly come upon unexpected patches of it. Melting snow running down from the upper side of a banked curve may freeze on the pavement as the sun sets. Because the decks of bridges cool much more rapidly than other road surfaces, moisture often condenses on them and freezes quickly into

thin sheets of ice when the temperature drops. A good winter driving rule is to slow down before you come to bridges and shaded places. Be especially careful in late afternoon and after dark.

Fog

Fog is dangerous at any time, but particularly so at night. Fog can sometimes be so thick that a driver can barely see the front of his own vehicle. The only thing to do in dense fog is to get off the road as quickly as possible.

Sometimes, on otherwise fairly clear nights, thick fog collects in small pockets at the bottom of hills. When you run into one of these pockets, slow down as quickly as you can and switch on your low-beam headlights. When you have passed through the fog, continue to drive slowly. One pocket of fog is usually a warning. There will probably be more fog at the bottom of the next hill. Continue to drive slowly until you are sure you are completely out of the fog area.

SEASONAL HAZARDS

Fallen leaves often make roads dangerous because tires are likely to skid on them when a driver applies his brakes, especially if the leaves are wet. In winter and spring, dirt roads are likely to be muddy. The wheels of vehicles turning from dirt roads onto paved roads track mud and dirt onto the pavement. At such places, there is an increased danger of skidding. When you see leaves, mud, loose dirt, or sand on the road ahead of you, slow down.

Spring and summer foliage may greatly reduce sight distances, especially on curves and at intersections. A driver, though familiar with a road, may not realize how quickly sight distances have been reduced when spring foliage appears. Unless he adjusts his speed to the changed conditions, he may have an accident.

SECONDARY ROADS

Secondary roads, built for local transportation and not as main highways, may be hazardous, depending largely on how you drive on them. The fact that a road is paved does not necessarily mean that it was designed for heavy traffic or regular highway speeds. So-called "farm-to-market" roads are much more

serviceable than the dirt roads they have replaced. However, they were still built for local transportation. On these roads, hills are likely to be steeper and curves sharper than on primary roads. Sight distances are often very short.

You can recognize secondary roads by their rectangular route signs. A driver who is unfamiliar with one of these roads must be on his guard for sudden bends and sharp dips. You cannot drive them safely at speeds that would be normal on primary highways. Probably the highest reasonable speed on most of them is 40 to 45 MPH. These roads are not unsafe, but the person who drives on them as though they were express highways is on his way to an accident.

Gravel roads are particularly dangerous because of their loose surface and flat (unbanked) curves. Stopping distances at all speeds are greater and skids and spinouts are more likely to occur. On gravel roads, you must keep your vehicle under close control and drive at a much lower speed than would be safe on a paved road.

SMOKING, EATING, AND DRINKING

The use of tobacco and alcohol reduces your ability to see. Eating and smoking impair senses. Never eat or smoke when operating a vehicle, and do not drink alcoholic beverages 8 hours before or when driving.

OVERLOADING AND CROWDING

No vehicle is safe when it is overloaded or crowded to the point that the driver's normal vision of the road is obstructed and he has difficulty operating the vehicle. As a general rule, you cannot drive safely if you allow more than three persons, including yourself, in the front seat of a vehicle with the gearshift lever on the steering column or more than two persons with the gearshift on the floor of the vehicle. In some compact vehicles, the maximum safe limit may be only two, regardless of where the gearshift is. Overcrowding in the back seat (more than three persons) is dangerous because it is likely to interfere with the line of sight from the rearview mirror. When a vehicle is equipped with seat belts, the number of passengers should not exceed the number of seat belts provided.

Do not use a car as a truck. A heavy load decreases performance and increases stopping distances. It may damage the springs, shock absorbers, tires, and transmission. A heavy load or one that is not evenly distributed may upset the trim and balance of a vehicle, making curves and stops more dangerous. Loads on trucks and trailers should be securely fastened to prevent any part of them from falling off. (See Chapter 18 for loading instructions.)

Never drive a motorcycle, motor scooter, or motorbike without wearing a safety helmet and eye protectors (nonshattering). Keep your lights on, day or night, so that other drivers can see you more easily. Never carry more than the number of riders for which the vehicle was designed.

SCHOOL BUSES

Except on highways with a median strip, all traffic in both directions must come to a complete stop whenever a school bus stops to take on passengers or let them off (Figure 11-1). In some localities, this rule applies to certain other vehicles, such as city, church, or Sunday school buses. Traffic must remain stopped until the bus driver turns off the special stop lights on the front and rear and/or withdraws the special stop sign located on the left side of the bus.

EMERGENCY VEHICLES

Police cars, ambulances, and fire engines are entitled to the right-of-way whenever they give an audible warning of their approach. The warning is usually a siren, sometimes a bell. Additional warning is usually given by a flashing red or blue light. The law requires you to drive to the right-hand curb or edge of the road and come to a complete stop. You must remain stopped until the emergency vehicle has passed or until you are directed to start again by a police officer.

Though laws and regulations require you to pull to the right side of the road, they do not require you to do it carelessly or without regard to consequences. Be sure to look before you turn your steering wheel. If you turn suddenly to the right without looking, you may collide with the emergency vehicle or with some other vehicle.

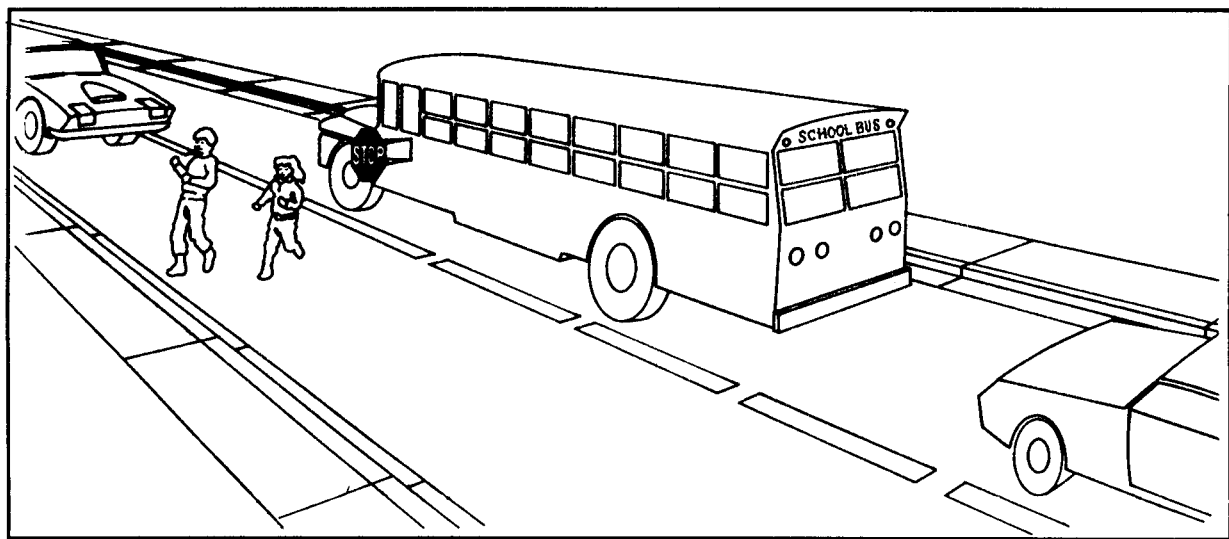


FIGURE 11-1. Stopping for a School Bus.

Never follow within 500 feet of a fire truck or other emergency vehicle. Never drive into or park in a block where an emergency vehicle has stopped in answer to a fire alarm. If you do, you will expose yourself to unnecessary danger and may hinder the work of the fire department. Never drive over a fire hose unless directed to do so by a fireman or police officer.

BREAKDOWNS

If your vehicle breaks down, get it off the main traveled portion of the road if possible. If you have a flat tire, you may damage the tire beyond repair if you drive on it, but you should take this risk if necessary to avoid greater danger. When your vehicle is disabled at night, always leave your parking lights on as a warning to other drivers. Day or night, turn on your four-way flasher warning lights.

Place warning devices contained in the highway warning kit as prescribed in the kit instructional manual. If the instructions are not with the kit, follow the procedures in Chapter 13.

If you cannot get your vehicle off the road and it is obstructed from view by a curve or hill, walk back along the shoulder of the road to a position where you can signal approaching drivers to stop in time.

Do not attempt to make repairs on your vehicle while it is in an exposed position on the road.

For Army Only: Make limited repairs, if possible, or notify your unit maintenance personnel according to the operating procedure of your unit.

For Air Force Only: For disabled vehicles on base, notify vehicle maintenance through your unit vehicle control officer during normal duty hours. After normal duty hours, notify the on-duty vehicle operation dispatcher. For off-base vehicle disabilities, contact the vehicle operations officer/superintendent to obtain vehicle repair instructions (AFR 77-4 and AFM 77-310, Volume 1).

SAFETY

Safety is a command responsibility. The driver must receive adequate instruction on safe practices when vehicles are operated. Safety, properly taught and constantly emphasized, will prevent much needless manpower equipment loss during critical military operations. The AR 385-series of Army regulations defines safety responsibility. A few of the safety hazards that you should avoid are as follows:

- Moving vehicles without first checking on both sides, front, rear, and underneath to ensure that you can maneuver without endangering personnel or equipment. Always post ground guides when maneuvering a vehicle in a motor pool or bivouac area, especially at night and under blackout conditions in any off-road area when it is too dark to see your surroundings.

- Running engines in closed areas without adequate ventilation.
- Using cutting wheels or torches without wearing protective goggles.
- Using defective or improper tools.
- Wearing rings or watches when working around the vehicle.
- Failing to use proper support when changing wheels.
- Climbing over bumpers and running boards without first removing ice or frost.
- Maneuvering vehicles with vision obscured by frost or dirt on windshield and mirrors.
- Driving too fast for roads or traffic conditions.
- Backing without a ground guide.
- Smoking during refueling operations.
- Failing to wear seat belt, helmet, and hearing and eye protection.